Three Quarters of a Century of Computing, and I was There.

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I. DEAR READER

Thank you for reading (or at least starting to read) what may be one of the least interesting 'memoirs' ever written. It's certainly the only one I've ever attempted. I was asked to write this for my 'going away dinner' — or as they call it officially, my 'tribute' banquet, at COMPSAC 2025 in Toronto this July.

Initially, I intended to write only a few pages, but it has taken me 18 pages to complete this assignment (without help from AI). I've had a lot of fun writing this, reflecting on two distinctly different parts of my career – corporate and then academic. But first, a bit of backstory.

When I started graduate school, I intended to become a professor. My wife had told me when we were dating that she always wanted to be married to a professor! But in 1973, when I got my PhD, there were no academic jobs in Canada. They had all been taken by US academics who came to Canada to escape the Vietnam War draft. So, from a career standpoint, I did not enter academia in 1973. Instead, after 28 years of STEM pursuits, at home and at school, I reluctantly initiated my corporate career - Part 1. The next part (Part 2) is longer in years (32), but with fewer pages, because that was my academic career, and much of what took place in academia was repetitive, redundant, and less interesting than the corporate part.

Finally, I haven't written about what comes after Part 2 because it hasn't happened yet. So, look for a possible sequel coming soon to a PDF (and possibly a Netflix special) near you, but not too soon, I hope!

II. EARLIEST DAYS

One day in 1952, I skipped school, pretending to be sick so that I could watch our new Admiral 17-inch black and white TV. That day, I saw my first-ever "computer" on the Art Linkletter show "House Party." It was the size of four refrigerators – or so it seemed, with blinking lights and zero functionality - just a big empty box! A few years later, still too young for adult movies, I was mesmerized by Robbie the Robot, my only memory from the film Forbidden Planet.

I wasn't just a TV and movie watcher but a reader, too. I first lost myself in Edith Nesbit's children's stories – visits to alternative worlds (metaverses). Later, in 9th grade, I devoured every science fiction novel in the junior-high library, becoming a self-proclaimed "expert" in nuclear-powered space vehicles, extraterrestrial life, and virtual communities. Later that year, I

was allowed to use adult public libraries where I discovered Neville Shute's dystopian nuclear holocaust novel, On the Beach, and John Hersey's 1946 non-fiction work, Hiroshima, about the nuclear bombing of that city.

In 9th grade, my first science class/lab sealed my fate. Seeing the iron filings patterns around a magnet left me awestruck! Who could've known? That was my first big step towards engineering. For the next five years, I turned part of my parents' basement into my "lab," dismantling every electrical/electronic product I could find – not always pleasing my parents when their appliances and radios disappeared.

In 10th grade, I selected electronics as a course option, soon discovering that I was incompatible with the program and with my classmates. Little did I know that the course wasn't exactly in the 'academic stream.' I became a terrible troublemaker in the class, and the teacher's worst behavior problem — somewhat atypical for me, at least at that time! Nonetheless, I shocked everyone (including myself) by earning the highest final exam grade in the class. My lab work, however, was abysmal. Mine was the only student-built amplifier that also received and played radio stations!

My high school days were filled with STEM subjects. I loved algebra, geometry, physics, and inorganic chemistry. I hated organic chemistry for reasons I still don't understand.

A. Maintaining the Integrity of the Specifications

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III. UNIVERSITY DAYS

My formal commitment to STEM occurred when I was pre-admitted to the University of Toronto's Honor Science program – an entry point to medical school. At the last moment, unjustifiably impressed with my math and science grades, I changed direction and entered U of T's engineering program,

starting in Civil and switching to Electrical in my second year. That marked my entry into the real world of computers.

In that second year, the first two weeks of our calculus course focused on learning punch card-based Kingston FORTRAN II on an IBM 1620/1710. Our assignment was to write a program solving linear equations using the Runge-Kutta method. I was lost. Beyond the mystery of the algorithm itself, statements like X=X+1 made no sense to me until week three, after the instruction ended, when I experienced a miraculous epiphany, a quasi-religious decisive moment. I never forgot those weeks of frustration when I later taught programming to struggling students.

In my junior year, IBM visited our class to introduce the revolutionary "3rd Generation" System/360 – a milestone whose specialness wasn't apparent to me until years later when I became an IBM 'professional hire' (people recruited based on professional experience, but not yet brainwashed by IBM). That summer, as a Honeywell Information Systems intern, I had my first real commercial data processing experience, developing PERT analyses for undisclosed projects. I must have killed a forest with all my punch cards, although I doubt that any of my analyses ever saw practical use.

IV. AFTER GRADUATION — GE DAYS

In 1967, upon graduation, Canadian General Electric hired me into their Graduate Engineering Development Program. I was assigned to their Time-sharing division, which sold programming services to engineers. The Dartmouth College-developed system was teletype-based (10 characters/second) for BASIC, FORTRAN, and ALGOL programming. I taught graduate engineers those languages, and I loved it. No punch cards, no wait time - instant system response at 10 CPS, and wasted rolls of teletype paper. Sustainability and recycling weren't yet topics in anyone's mind. I invited my IBM-employed and graduated classmates to see this time-sharing system, and their negative reaction, rooted in their punch-card mentality, confirmed that I'd made the right choice before graduating in declining IBM's early Saturday morning employment interview!

Though my classmates and I had been IEEE student members, I joined ACM at GE mainly because they paid for my membership! I attended the 1967 ACM Annual Conference in DC, touring monuments with Grace Hopper! That year, in an ACM journal, I also discovered Joseph Weizenbaum's ELIZA, which was my true introduction to what AI would become.

At GE, I developed serious programming skills, designing a government accounting system, coding electrical flows in fuses, and for defense research, simulating submarine navigation. A perk was permission to lug a teletype home, connecting via acoustic modem to GE's DataNet/30 system. Little did I know how that experience would later change my life.

V. BACK TO SCHOOL DAYS

Despite GE's entreaties, my passion for computing led me to leave and enroll in the University of Toronto's new data processing graduate certificate program. During that year, I worked part-time at the university's computer center as a programming advisor, learning about IBM's 7090/94 and S/360

JCL while helping students and faculty debug their programs and decipher arcane programming and system error messages.

One day that winter, while seeking warmth in the School of Graduate Studies and browsing graduate program brochures, I discovered the Graduate School of Education's Department of Computer Applications. The program offered people-oriented technology courses, unlike the purely technical Computer Science and Engineering curricula to which I was accustomed. Admission to the MA program required completing my data processing certificate with an overall grade of A, and then doing "make-up" courses in education, psychology, sociology, etc. -- eye-opening subjects far different from my engineering background.

In my MA program, I took a cognition course based on the nascent AI work of Newell, Shaw, and Simon at Carnegie Mellon. Using what would later be called "knowledge engineering," I documented my wife Gail's Dominoes-playing strategies and programmed them with the list processing language, IPL-V, to create an interactive game that led to my first "real" publication – in the Journal of Simulation and Games.

On a personal note, technology had advanced enough that I could work from home using a Texas Instruments portable Silent 700 terminal instead of a bulky teletype, still connecting to remote computers via acoustically coupled modems. This lightweight machine used expensive thermal paper, so I had to be careful about how much I printed. With that terminal, I could compute at school during the day and at home at night.

Midway through my MA, during a rare walk with my wife (then an elementary school teacher), she mentioned her dissatisfaction with my "always being on the computer." We'd been married about 2½ years, and this news shocked me. All I could think about was the years ahead to complete my MA and then my PhD. How would I keep her engaged while I programmed and completed those degrees? After considerable discussion, we agreed to have our first child as soon as I completed my MA. That would keep her occupied while I continued my PhD studies. Our first son was born nine months after I earned my MA. He later crawled around the computer room's raised floor while I "babysat," working on my department's DEC PDP 9 console! Our second son arrived about a year after I completed my PhD. (My first and only and current wife received her PhD about ten years later!)

My graduate work firmly established the foundation for my ensuing career, corporate and academic. My theses focused on tools and best practices for teaching programming. I designed and built (programmed), by today's standards, a rudimentary microprocessor architecture with user-programmable machine, assembly, and high-level languages. My MA thesis describing this work won second prize in the Canadian Information Processing Society's (CIPS) annual paper competition, a recognition that later proved significant.

VI. IBM CANADA DAYS

With my brand-new PhD, a major Canadian consulting company hired me to lead government education evaluation projects using mainframe SPSS for survey data analyses. Seeing newspaper advertisements by IBM Canada for positions

unrelated to my skills, I sent a speculative letter saying I didn't match their requirements but perhaps they had use for me somewhere in the organization. To my surprise, I received an interview invitation from an IBM Canada Lab manager who had read my CIPS paper. Within two weeks, I was hired for IBM's new Future Systems group – a project canceled between my acceptance and first day!

After weeks of aimlessly reading about IBM products and regretting my decision to come to work for this company, I was assigned to Special Engineering as a "business product planner" for a unique and novel higher education multimedia computing project. This was 1974, long before multimedia computing existed as a discipline. For the next few years, I worked with an exceptional IBM engineering team and University of Waterloo faculty to develop a state-of-the-art prototype multimedia system functionally equivalent to today's eLearning platforms.

To really understand my experience during those years, you must read Tracy Kidder's The Soul of a New Machine – his description of teams working on impossible deadlines with unmanageable budgets precisely matched our engineering environment. Late nights, weekly drives through Canadian winters to Waterloo, excuses to management for missed deadlines and budget overruns – those were the good old days!

During those years, a colleague recommended that I work on getting ahead in the company, which was apparently a goal of ambitious IBMers. He told me that I needed to become visible to management through presentations and more presentations. When I eventually left IBM, I had accumulated hundreds of "foils" (pre-PowerPoint slides). Someone suggested I also resume wearing my "iron band" engineering ring, which I'd removed in graduate school. Though I wasn't doing much engineering, it suited my new Special Engineering role.

During this time, I attended countless courses in management, finance, product planning, and marketing – essentially a compressed executive MBA. I really appreciated those courses years later when I taught similar subjects as a professor in a business school. Those courses and the multimedia project's high profile gave me lots of visibility and allowed me to travel internationally, building relationships with IBM personnel and customers worldwide. Those IBM years were wonderful career builders. I'll never forget the sign at IBM Canada headquarters: "World Peace Through World Trade." If only.

A visit to IBM Watson Research in Yorktown Heights later transformed my career trajectory. Shortly after returning to Toronto from that visit, a researcher with whom I had met there invited me to spend a year or two at Watson Labs doing "anything you want." Despite this incredible offer, my family's reluctance (and mine) to leave Toronto made me decline. That's so ironic, looking back!

While at the Toronto Lab, I was among the few employees with management potential selected to serve as the Lab Director's "assistant" for a week or two – an unprecedented learning experience. A few years later, when that director, promoted to VP of Canadian Manufacturing, invited me to work for him, I foolishly declined, claiming my interests lay in education. Only later did I recognize the missed opportunity.

When the multimedia project ended, I moved from the Lab to Marketing to support IBM's education sales teams across Canada. Though traveling the country during winter proved impossible, I learned about IBM's educational offerings and the realities of "sales" (which IBM termed "marketing").

VII. IBM USA — A DISCOVISION ADVENTURE

After almost two years in Marketing, I received a life-changing call. My Watson Research contact invited me to Southern California to meet with the "president" of DiscoVision Associates (DVA), a new and unique joint venture between IBM and MCA (the entertainment company) – formed to develop and market (and sell) analog videodisc technologies and products. While I was initially reluctant, a November escape from snowy Toronto to sunny Los Angeles was tempting.

At my manager's urging, I flew to LA the next day. Beyond the 30-degree temperature improvement, I was mesmerized by the technology: audio/video playing from a shiny 8-inch disk, with console and wireless remote controls, playing out on a standard TV. What an advancement over the multimedia technologies I worked on in Special Engineering!

The perks and salary made their offer irresistible. This seemed like an escape from the lower-paid, lower-prestige education computing sector, where I felt trapped, and a leap into the exciting entertainment industry. Within six weeks, I resigned from IBM Canada, obtained my H-1B visa, and began work in Costa Mesa, removing my engineering ring as I entered a new phase in my career.

My two years at IBM DiscoVision were disastrous. The organization was totally mismanaged; IBM couldn't manufacture reliable videodiscs, and IBM's computer marketing experts, seconded to DVA, were completely lost in the entertainment industry. It didn't help that our products competed with newly released consumer videotape systems that could record audio and video.

In retrospect, I should have heeded the US Customs officer who astutely observed when I entered the country for my first day at DVA in January 1980: "Videodiscs are a dud. They don't record!" Listening might have saved IBM millions and kept my family in Toronto. Lesson learned: customers are often more insightful than we think.

The joint venture began failing within months after I joined. (Not my fault!) They fired my boss, the fellow who had recruited me, and invited me to return to IBM Canada, all expenses paid. However, we had already sold our Toronto house and bought one in Southern California. More importantly, there had been a goodbye party in Toronto, and we would have been embarrassed to undo everything. Though feeling stuck, I continued developing multimedia expertise during those mismanaged years, which later served me well in academia.

Shortly after joining the venture, Apple II+ personal computers became popular in education and the back offices of many large and small businesses. Many customers connected our videodisc players to Apples via RS232 interfaces, creating relatively inexpensive interactive multimedia experiences, particularly for computer-assisted instruction (CAI). I pleaded with management to buy me an Apple II+, but they refused since

it wasn't an IBM product. Notably, the IBM PC was launched about two years later.

So, I bought my own Apple II+ and created a home computer center where I spent considerable time learning and programming. This investment also launched my older son's computer education. The eight-year-old watched over my shoulder, learning to program, and despite later earning a journalism degree, he eventually developed a significant high-tech career. My wife wrote her doctoral dissertation using a now-forgotten word processor on that machine. Our younger son focused on skateboarding with his buds!

VIII. TOSHIBA AMERICA INFORMATION SYSTEMS

When the joint venture closed in 1982, IBM offered to move me to their disk storage R&D facility in Arizona. Having worked at DiscoVision using analog videodiscs as digital storage devices (precursors to CD-ROMs), I had no interest in DASDs (Direct Access Storage Devices), and anyway, we didn't want to move again. So, I left IBM and interviewed with Toshiba America Inc. (TAI), which was entering the PC market with its new Japanese computers. A friend had suggested they needed someone to lead this effort, and who better than me?

The TAI interview process was unlike anything I'd ever experienced. The American CEO was a Harvard MBA with a consulting background but limited corporate management experience. Japanese 'collaborative management' was trendy in those days, and he embraced this and other business fads. My interview, conducted by his on-retainer consulting firm, included strange practices like dumping water on my lap during lunch to see my reaction. Despite their recommendation against hiring me (too independent for collaborative management), the CEO hired me anyway, and we became drinking and tennis buddies. I always won at tennis, but he outperformed me in the other "buddy-ness"!

In the early 80's, Toshiba imported IBM PC-like computers to target the same market as IBM, but offering better hardware and pricing. The problem was that those machines ran MS-DOS, not PC DOS, making them incompatible with popular IBM PC applications. Among my responsibilities was to convince software companies to create Toshiba-specific versions of their products that we could license and bundle, saving customers from buying expensive software separately. This presented substantial challenges for software companies who resisted developing/supporting relatively low-volume, Toshiba-only products. The proliferation of IBM PC applications, almost none of which ran on our machines, made sales nearly impossible despite the machines' exceptional build quality.

Another responsibility that fell to me was to translate Japanese documentation into English. Strange as it may seem, this was manageable despite my not knowing Japanese because the documents had originally been written in English before being translated into Japanese as part of Toshiba's Microsoft licensing agreement. The diagrams labeled the computers' innards (in English), and since DOS and BASIC commands originated in English, "translation" was relatively straightforward.

I was also responsible for customizing imported machines to customer specifications, requiring me to open some to swap boards, components, and cables. Later, I recruited and managed the customer support team and helped our sales teams, most of whom knew little about personal computers. This was 1982, early in personal computing history, making my computing knowledge and experience increasingly valuable to TAI.

Trying to sell "Pretty Compatible" computers against actual IBM PCs proved fatal to TAI. After a couple of years, TAI withdrew from the US computer market to focus on dot matrix printers. Despite always finding printer technology uninteresting, I was shocked when my tennis buddy, the CEO, warned me that I and all my staff would be 'released within 2 weeks. I couldn't believe a company as large as Toshiba couldn't find a position matching my education and credentials. I was still working with an IBM mentality, which, at the time, would never have happened at Big Blue. This taught me a lesson many foreigners working for Japanese companies learn - it's best to be Japanese when times get tough. Has this changed? You tell me.

At TAI, I also learned that Harvard MBAs are experts in economic storytelling. Our quarterly reports to Japanese headquarters highlighted narrative over accurate numbers. My tennis buddy excelled at this quarterly results storytelling, but eventually, even he couldn't disguise our lack of sales when unsold computers were returned in bulk.

During all this, TAI was developing/testing avant-garde portable, foldable computers – the precursors to today's laptops. As the person also responsible for these machines when they arrived in the US, I got to play with them firsthand. They were beautiful, lightweight, and battery-powered with foldable LCD screens. Again, speed and portability meant little when they couldn't run popular IBM PC software. Still, using them in American Airlines Admiral's Clubs was exciting, attracting attention from curious onlookers.

A couple of years after I left, Toshiba returned to the US computer market with newly designed, truly PC-compatible laptops and seemed poised to become the world's leading manufacturer. They had learned a lot from their earlier US market experiments – but by then, I was gone.

While awaiting my official termination, I revised my resume and, with the help of my Harvard-educated CEO buddy, identified appropriate headhunters and snail-mailed it to many – this was before online recruiting, or for that matter, online anything. A major Atlanta telecommunications company soon invited me to an interview at their magnificent headquarters. Two weeks later, an inside contact told me they were about to make an offer until learning of my TAI layoff. It seemed they weren't interested in "damaged goods." That company was acquired five years later, and all its executives were laid off. Who had the last laugh?

IX.   THE BRITISH ARE COMING

While waiting for the eventual non-response from the telecom company, an international recruiter contacted me about a US software startup in a division of Thorn EMI – a major British multinational, not that well-known in the US. Thorn EMI was created when Thorn Electrical Industries merged with EMI in 1979. The entertainment division owned, for example, Capitol Records, Abbey Road Studios, and The Beatles. During the merger, they formed Thorn EMI Computer Software (TECS), a

Southern California company aiming to capitalize on the emerging personal computer market. They sought someone to oversee the acquisition/licensing, and development of personal computer productivity and game/home software. The company president, a PhD in marketing, ex-GE manager, and tennis player, whose family lived around the corner from mine, offered me the position of VP of Development. The interviews were refreshingly normal without gimmicks like the water-dumping test!

A few months after I joined TECS, Thorn EMI bought Perfect Software, the developer of Perfect Writer, Perfect Calc, and Perfect Filer for CP/M 8-bit computers. The acquisition included all products, source code, and the 75-person development center in Eugene, Oregon.

I was responsible for managing the center and its programmers and overseeing the conversion of its CP/M applications to PC-DOS. Integrating the Oregon hippie culture into Thorn EMI's corporate culture was a more formidable goal. Perfect's culture was decidedly "uncorporate" – unorganized rather than disorganized. The staff worked in small project teams, meeting periodically to assess progress, sometimes with code reviews. Their methodologies differed dramatically from IBM's nascent software engineering practices. Having designed Western Europe's air traffic control system, the parent company Thorn EMI wasn't thrilled about Perfect's "cowboy" culture but wanted their desktop software packages.

When tasked with "cleaning up" their practices, I decided to make a strong corporate first impression. On Monday, the day the acquisition closed, I called the Managing Director (MD) in Eugene, announcing that I'd be up to visit on Thursday night, flying in from an event in Atlanta. Landing at 7 PM, I was greeted by the MD and senior staff who had arranged dinner and hotel reservations, planning for us to meet the next morning. When I learned that all their presentations were ready, I suggested skipping dinner and meeting in their offices at once, which was not what they expected. But that would have been what a senior IBM manager would have done!

Over the next 6 months, we all became friendly associates. Initially resistant, they gradually understood and began to adapt to their new corporate culture. I visited Eugene monthly and worked with their MD to professionalize their software development practices. We successfully delivered updated software despite unrealistic deadlines from my own management. Over time, my sympathies increasingly aligned with the Perfect staff as corporate demands grew unreasonable – the Oregon guys were becoming my team.

During one visit coinciding with my birthday, I was brought to a conference room for an all-hands meeting, where I was to make announcements about the team's progress. When I entered the room, I was surprised to find the entire staff standing with their backs to me. Suddenly, they turned around, each holding a photograph of my face in front of theirs, and they began to sing Happy Birthday! I was in – at least for a while.

Six weeks later, I was summoned to London and informed that TECS couldn't continue to support the Eugene center. They wanted me to move development to the Southern California headquarters and reduce staff by 50% while still maintaining all product release schedules. I had to identify critical developers, convince them to move from Oregon to California (culturally worlds apart), release the remaining staff, and dispose of the Eugene facility. I completed this incredibly challenging task within three months, although I made many enemies in the process.

While the transfer succeeded and schedules were met, TECS struggled to sell acquired game software (not my responsibility). Unsold game cartridges filled a warehouse. The new Perfect Software products weren't selling well either; they couldn't compete with established software products such as those from Microsoft, Ashton-Tate, Lotus 1-2-3, etc. So, once again, as with TAI and their initial failure in the US computer market, Thorn EMI closed the California operation and released all staff – except me! They changed my title to VP of Research, moved my office to my home with all my furniture and my computers, and for the next six months, I reported to TECS UK's Managing Director as the London board's US market observer. After a few weeks of grieving for the loss of my colleagues, my situation started to improve – traveling throughout the US, visiting software companies, attending conferences, writing reports, and visiting London, primarily presenting/discussing IBM, Microsoft, and Apple's ascending dominance.

Six months before TECS USA closed, Company X (name deliberately withheld) sued Thorn EMI, claiming that the company Perfect Software had copied X's source code verbatim before our acquisition. Despite Perfect's code containing truly "problematic" elements, Thorn disputed the claims. For the next year, while I was VP of Research, Thorn repeatedly filed depositions requiring Company X's executives to defend their position – clearly a case of corporate deep pockets trying to outlast a small entrepreneur. I learned much about corporate business ethics as Company X eventually settled for a fraction of their legitimate claim.

X. CONTEMPLATING CORPORATE LONELINESS

So, there I was, nominally a multinational corporation executive with all the benefits — car, travel freedom, substantial budget, and salary — but lacking local associates for collaboration. My schedule was perhaps too flexible, rarely constrained by others' needs. Each morning, I'd rise long after my children left for school and descend to my "corporate office" to check my email, text, and voice messages. Just kidding! This was the mid-1980's, before mobile communications, with the public Internet still a decade away. Connecting with colleagues required faxes, document shipping, expensive long-distance calls, or travel. Professionally, life was lonely.

One weekend at a social event, a Physics professor friend from Cal State Fullerton (CSUF) mentioned that their business school's Department of Management Science and Information Systems sought a tenure-track faculty member. Following his suggestion, I applied and underwent the interview process, which was quite different from corporate practices. After meeting many people and making many presentations to faculty, I was offered a tenure-track Associate Professor position. While deliberating the substantial salary reduction, my accountant (and friend) recommended accepting the offer, noting I'd likely live longer and retire with better benefits as a professor than

continuing in stressful corporate roles. It turned out that he was right.

Upon accepting, I immediately informed my London boss. Though surprised, he wished me well and offered me a half-time consulting retainer at half my corporate salary, allowing me to keep all company equipment, even the car! I couldn't refuse. That summer, I transitioned from quasi-corporate executive to untenured associate professor with a corporate consulting arrangement. Through my first academic semester, it was a wonderful existence.

XI. EXPERT SYSTEMS — THE END OF AN ERA

As VP of Research at Thorn, I had explored emerging software technologies for potential acquisition or development. This was a role that continued in my consulting position, and it was very synergistic with my faculty responsibilities. Expert Systems (ES) was a hot topic throughout the 1980s, and TECS's British MD, aware of my earlier Knowledge Engineering and Domino's work, encouraged me to investigate state-of-the-art developments in ES. At the end of my first CSUF semester, he invited me to join him to visit the Turing Institute in Glasgow, Scotland, intending to enroll me in a four-week executive program the following summer.

In December, at the end of my first fall semester, I flew to London, and from there, we went to snowy Glasgow for a two-day Institute visit. The staff who were excited about hosting me, a California professor and Thorn EMI "executive," had started to design my summer curriculum. However, upon returning to London, the MD received an emergency call from the Thorn EMI board: TECS London was closing, and all staff were "made redundant," including the MD himself. Since I wasn't technically staff, they overlooked me in this massacre, but the Turing Institute plans evaporated.

I returned home, receiving consulting fees for a few weeks until an emergency call informed me that I, too, was finished. After they retrieved the car (letting me keep their computers and furniture), my twenty-year corporate career ended.

As a side note, a few weeks later, my former TECS US boss and his London-based boss called to ask if I'd like to join them in an attempt at a management buyout of TECS from Thorn EMI, who had expressed a friendly willingness to consider a proposal. With no apparent personal risk, since we planned to raise funds from Southern California financial sources, I agreed. Over the next 2-3 months, while developing our buyout plan, I learned a lot about corporate/management buyouts. We eventually secured financing from a local bank and presented our proposal to Thorn EMI. They never responded to our proposal, but a couple of days after our submission, we were disappointed to learn from a press announcement that they had decided to incorporate TECS into one of their internal divisions. So much for friendly corporate relations. None of us was surprised when, two or three years later, they eliminated the entire TECS business and declared it insolvent. By then, I was solidly entrenched in the second phase of my career as a tenure-seeking associate professor.

XII. PART 2

MY ACADEMIC CAREER

A. The Very Beginning

Well, there I was, at about 10:50 AM, August 1986, driving to campus the day before my first department meeting. I didn't have to be there that day, but I was curious about my new career environment. The temperature was about 90 degrees (F), forecast to rise another 5 degrees in the afternoon, and there was nowhere to park! After 30 minutes of driving around, I learned my first practical lesson about university life – the early arrivers get the parking places. So, I went home, determined to show up earlier the next day, when the weather was forecast to be even hotter.

The following day, I arrived at around 8:30 AM and parked with almost no problem. My first learned lesson was to always arrive at campus at least 20 minutes before the hour, any hour, since students were sure to take all the parking places just before classes started on the hour.

I hadn't been on any campus the first day of classes in almost 15 years, and I was shocked <grin> at how California co-eds dressed. It was never this hot the first days of class in Toronto, and Canadian girls, at least 15+ years earlier, from what I remembered, did not dress like they were at the beach. But this was sunny Southern California, and the times and places were different.

I had no classes to teach that day, but I attended my first department meeting, where I learned my second real lesson about academia – if possible, avoid department meetings! When I entered the meeting room, I was introduced to a little bit of welcome applause (actually, microscopic!), but mostly I was stared at by a majority of apparently suspicious faces. As it turned out, colleagues not from academia were viewed suspiciously by those rooted in academia, and I was clearly not from academia, hence the suspicion.

As I learned later, my business school colleagues had a lot less practical business experience than they thought they had, only gleaning it from their sometimes-consulting contracts! And, of course, they all had PhDs in one or another academic aspect of business. Marketing, management, IS/IT, management science, etc. – fields in which they all published articles in "legitimate" journals, never read by anyone in the business world. And here I was with almost no publications, and merely 15+ years of business experience. I entered academia with beliefs that have never changed, even today: One really can't claim "real" business experience unless i) they had been laid off at least once, ii) they had laid off others, and/or iii) their family income and security had at least once been dependent on the income from their job.

In any case, that meeting was unforgettable. I don't remember the discussion topic, but I stayed silent in unfamiliar territory; everyone seemed compelled to speak, at length, at least once or twice. After about 90 minutes, the chair declared the meeting over and announced that the discussion topic would continue next year! I couldn't believe it. There was no resolution, and the discussion would continue next year? My experience in industry had never included an inconclusive 90-

minute meeting that would continue 12 months later. Second learned lesson: Department meetings - wasted time; if possible, avoid at all costs.

B. First Classes

As a newbie in the department, I was assigned two daytime sections of the freshman-level course, Introduction to Information Systems. This wasn't much of a challenge in terms of the content. Anyone in the field for 5 years or so would be comfortable with the material. All business school majors had to pass this course to move forward and then select this or another business school major – Economics, Accounting, Marketing, etc. Many students who majored in IS had started in Computer Science, found it too demanding, and switched to the business school, hoping to major in IS. Most of the freshmen who later selected Management planned to graduate the following May and become the CEO of Apple, Meta, Tesla, etc., in June. They were all delusional.

The part of the curriculum that stumped most students who would ultimately not make it was learning BASIC, the then introductory programming language of choice. We didn't want them to become programmers, except for the IS majors. They would learn other languages later in their program. But we wanted all business school undergraduates to appreciate what it's like to program when/if they had to interact with programming staff after they graduated. The textbooks weren't helpful when providing programming exercises for these students, so I created my own. As a first assignment, I asked them to program an online check register to keep a running tally of credits and debits.

About a week later, I was called into the department chairman's office and raked over the coals because a student had complained about the assignment. I was told that I couldn't expect those students to do an assignment like that because they had yet to take the introduction to accounting course! I couldn't believe it. Keeping a check register – accounting! Compare that to my own first programming assignment with Runge-Kutta. Another lesson learned.

Yet another lesson that I was quick to learn was that student ratings of professors are highly correlated with how easy the instructor is on the students. Students know this, and they also know that those ratings are important for instructors' tenure and promotion. Sadly, they also know which instructors are vulnerable to this kind of extortion. It didn't take me long to figure out how to "curve" students' grades — mid-term and finals — to avoid astronomical failure rates and avoid their revenge. And lest you think I was/am alone, I can assure you that almost all instructors I knew/know have learned that same lesson. I had many student comments on my course evaluations, all of which, sad to say, to keep my sanity I ignored after I got tenure.

After a year of freshman babysitting, I proposed new senior and graduate-level courses, one on digital marketing and another on systems software and architecture. My experience with more mature students was entirely different from that with freshmen. In a nutshell, it was great! Students interested in the material, students who wanted to learn. Although these courses were optional for IS majors – seniors and graduate students – my

classes were filled, year after year. And the student evals were quite different than those of the freshman. So, I must have been doing something right.

One last vignette about teaching undergraduates. When students had overcome their general ed courses and intro this and intro that, IS majors had to pass the dreaded COBOL programming course. None of the faculty knew the material (or admitted that they did). So, that course, like about half of all courses in the United States, was taught by an "adjunct" instructor – oftentimes someone looking to supplement their full-time salary earned elsewhere. Unfortunately, despite our own adjunct instructor's terrible student evaluations, the department had little choice but to continue to hire her, semester after semester. The truth was that professional COBOL programmers would never teach for the pittance paid to adjuncts. This was a major problem for the department since students had to pass that course to move on to the other IS courses, or drop out of the program.

Foolishly, I confessed to knowing COBOL and volunteered to take over that course so that more students could graduate as IS majors. The truth was that, as a graduate student, I had never gotten my own COBOL assignment to work despite submitting the keypunched card deck countless times at the computer center! But now, times were different. It was more than two decades later, and punch cards were long gone. The COBOL compiler was now PC-based, code was interpreted, and it was much easier to learn/teach the language. So, I took over the course and greatly reduced the student dropout rate. And that was because they learned it, not because I simplified it! After Y2K, the department dropped COBOL as a requirement and moved on to more contemporary programming languages. Teaching that course introduced me to almost every IS student in the program – a tangible benefit that came up later.

C. Other Adventures at Cal State Fullerton

Shortly after I arrived at CSUF, the dean's office sent a memo asking for proposals for using California Lottery funds. A suggested topic was "multimedia." This was an easy decision for me and a significant turning point in my academic career. I submitted a proposal for funding to build a multimedia learning center based on videodisc technology, and based on all my contacts in the industry. And it was funded!

Within three months, I procured 10 InfoWindow Systems from IBM, 10 PCs to drive them (from a computer company in which one of my MBA students was a VP), and 30 sets of commercial videodiscs for teaching productivity software – the same software taught in our freshman IS course. The hardest part of my effort was securing physical space for this learning center. The dean of continuing education, who "owned" floor/office space in the library, saw the value of owning this advanced learning center and offered me prime real estate on the library's main floor. He also funded a few of my (ex-COBOL) students to oversee learners at the center. That center was instrumental in my eventually receiving tenure and being promoted to full professor. It was the driving force behind many of my publications, essential to my promotion.

My relationship with the dean developed into a personal friendship, and he eventually hired my wife as a full-time

program specialist in human development (which she had been teaching in the humanities school) and to manage the center and my students. Isn't nepotism wonderful?

Through conversations with my wife and the dean, I became more familiar with the operation of continuing education, and one evening, over beers with him, I suggested that their IT structure was obsolete and needed to be updated to conform to the changes taking place in the rest of the university. And since I was on the university's 'technology transformation committee,' I was intimately involved with those changes. He suggested that if I wanted, he could "buy" out my teaching obligations, and I could work in continuing education full time, which I did. Over the next two years, as IT Director of Continuing Ed, I built an IT department, staffing it with my now-graduated COBOL students. During that time, I transformed that department from a mishmash of obsolete computing technologies into systems fully compliant with the rest of the university's IT operation.

One of the other things I did in that position was to host the University of British Columbia's then-new, free learning management system (LMS), WebCT. One of our faculty members had learned about that system and wanted to try it, but our university's IT department was not interested in supporting the unproven and untested WebCT. At that time, eLearning as we have come to know it did not exist in most universities. So, I did it myself. I installed the system and demo material on a small, network-attached IBM PC server that I kept under my desk.

My technology activities attracted the attention of the university provost, who was forming a new Faculty Development Center (FDC). The newly appointed director of the Center, a friend with whom I had served on the academic senate, invited me to be the Center's full-time Academic Technology Coordinator (ATC), releasing me from ¾ of my regular faculty (teaching) responsibilities. (That director eventually became president of one of the 23 Cal State universities.)

So, I left continuing ed, moved to the FDC, and took with me support for WebCT. But since the Center had no IT facilities, I had to find a way to provide that support. Fortunately, one of the university's senior IT staff, a friend I had worked with for years, agreed to deploy and support a small WebCT server at the IT center. As eLearning became increasingly popular, my friend, who was promoted to IT director, collaborated with me to grow the university's eLearning facility. Eventually, we retired WebCT, which had a huge following but was difficult to learn and support, and deployed Blackboard as the only LMS on campus. (After I retired, CSUF called me back to lead a task force to recommend a new, modern LMS. The committee that I led recommended the adoption of Canvas. Four years later, all the CSU campuses adopted Canvas, which the Chancellor's Office now supports for everyone in the CSU.)

D. A Major Turning Point

Almost two years after joining the FDC, I attended a tutorial about MERLOT (Multimedia Education Resource for Learning and Online Teaching), a new, online digital library of teaching and learning resources; the library was developed and supported by the CSU Chancellor's Office. After the session, I volunteered and did some summer work on the MERLOT library. The MERLOT Executive Director (who was also CSU Assistant Vice Chancellor) later invited me to help him develop the new CSU Systemwide Academic Technology Services (SWAT) to negotiate application software contracts for all the CSU campuses. In this (part-time) position and while I was still at the FDC, I negotiated money-saving agreements, including for LMSs, that saved the CSU millions of dollars over the term of those contracts. I continued my responsibilities at the CSUF FDC with my (greatly reduced) department teaching load. Meanwhile, MERLOT's popularity and usage continued to grow, and it needed someone to oversee its day-to-day operation and improve the system's functionality. The Executive Director invited me to take a leave of absence from CSUF (with full retreat rights) and become the full-time MERLOT Managing Director (MD), which I did, for the next almost 20 years!

As MERLOT's usage and library grew, so did issues about bugs and usability. The folks who first developed MERLOT were either unaware, had little concern, or even knew about software engineering methodologies essential to produce/release/support a production-level software system. Consequently, the system was undocumented and difficult to support; even more challenging, the user interface was "aged." In short, a major overhaul was needed. In the next few years, I hired and managed a development team to update and fix the system, and a new webmaster for end-user support. We completely modernized the interface, added new functions as part of the effort, and moved the system to the Cloud (AWS). One of the most significant changes was internationalizing MERLOT so that it could be used in almost any language by users worldwide. That change expanded our user base broadly and provided us with "fame and glory" – well beyond California and the US.

Five years after I left MERLOT, I attended an IEEE Computer Society conference in Italy, at a panel about digital repositories with participants from Asia, Europe, Central America, etc. A couple of the panelists spotted me in the audience and insisted that I join them because of the work I had done to develop the international reputation of MERLOT!

My position at MERLOT was a "blessing" for me. Because of my involvement with MERLOT, I was elected to the Board of Directors of the international Open Education Consortium. I also was able to capitalize on my MERLOT work when applying for a Fulbright Specialist fellowship which took me to Israel where I led an effort to create a Hebrew version of MERLOT, and later to Italy where my work was included in an accepted-proposal to the Italian Ministry of Education to include MERLOT-like Open Education Resources in the country's elementary level mathematics education curriculum.

When I finally retired from the CSU, I regretted leaving MERLOT. It had become an essential part of my professional life for almost two decades, but life must move on.

E. Don't Forget About IEEE

The other part of my academic life has been my involvement with IEEE, particularly the Computer Society. Soon after joining Cal State Fullerton, I was asked by my colleagues about

my "research agenda." Who has a research agenda after almost 15 years of corporate life unless they've worked in research positions? Certainly not me. I soon learned that evidence of a research agenda meant publishing papers in "acceptable" journals. In my department at that time, where most of the faculty were either statisticians or operations research types, that meant publishing papers filled with formulae, statistics, tables, etc. – hardly the province of IS. The department's name said it all – Decision Sciences and Information Systems. (It's since been changed.) The faculty, except for one other untenured person, were all Management Science types with little to no understanding of the field of IS. A few were self-proclaimed IS experts because they were familiar with Windows and Excel, but not much about systems. And there were only 3 or 4 "acceptable journals" in their minds, with acceptance rates of under 5%. Good luck getting published in those, especially if your field is Information Systems. However, for some strange reason, ACM and IEEE publications were considered almost as good as the Management Science journals, probably because of the "mysterious" content published by those groups. After all, if your undergraduate degree was not in a STEM field, anything related to STEM was complex, difficult, and mysterious.

After about 6 months, I responded to a call seeking a workshop editor for an annual ACM multimedia conference, and probably because of underwhelming response, I got the position. Without belaboring my thoughts about the months of work I put into this "job," I was relieved when the conference was over. The strange thing about the experience was that I did not receive a single comment (or help) from anyone at ACM for all the papers and profitable revenue I collected on their behalf. Once it was over, it was like I was dead. At least dead folks get sympathy cards. Many IEEE volunteers later told me that this was typical of ACM, and very unlike the friendly atmosphere of IEEE. And they were right.

So, once again, searching for a research agenda, I learned that the products review editor of the IEEE Computer Society's magazine, Software, was looking for product reviewers. I responded and, of course, was invited to do reviews. After about a year, that editor moved on to become CS VP of Publications, and I was offered his editorship, which I accepted. The Editor-in-Chief (EIC) of the magazine invited me to serve on the magazine's board, which I also accepted. After another 6 months, the VP of Publications with whom I had become friends invited me to be a Member-at-Large on his Publications Board. That was the most fun I've had as a CS volunteer.

Every four months, I traveled to a Pubs Board meeting somewhere in the US, stayed at a nice hotel, the next day, in the meeting, shot my mouth off about this or that, had a great dinner, and returned home the next day. There was no homework between meetings, and my only responsibility was attending meetings, talking, and voting on issues about which I had only a marginal understanding. I hated volunteers like me when I later became a senior volunteer responsible for organizing such events. Until later, I didn't understand how much work went into planning those meetings, and the many consequences of what took place at them. But that board membership really kicked off my IEEE "career."

For the next few years, I sat on and chaired many "Pubs" committees, was on and led EIC searches, served on task forces to launch new magazines, etc. I helped launch Multimedia magazine, and later IT Professional magazine (where I am still Advisory Committee chair), participated in searches for their first EICs, served on their boards, served as department editor, and wrote articles for them, all this in addition to serving on the board of Software, where I also was a department editor.

During all this, a senior staff member suggested that I broaden my experience beyond Pubs, so I volunteered for a collection of CS "operating committees." Shortly afterwards, the CS Board of Governors combined those committees into a new Electronic Products and Services Board (EPSB), under a new vice president. After about 6 months, that VP resigned, and the CS President asked me to replace him, and I did.

Now, as a member of the CS Executive, I decided to start taking my volunteering more seriously than in the past, when most of my participation consisted of speaking up at meetings. Until then, I had only been paying CS annual fees, not IEEE fees, so I wasn't really an "official" IEEE member– a decision that saved me a little money each year, but one that, as I age, I have come to regret. Life Membership is calculated as Age + IEEE Membership Years; when that equals 100, you are a Life Member. If I had paid IEEE dues right from the beginning, I'd have become a Life Member years ago. Now, I have to live another 50 years! Not really. I will become a Life Fellow this year.

After a couple of years as VP of EPSB, I had done all I could and so had that board. I recommended to the Board of Governors that they terminate EPSB, and they did – a rare occurrence in the CS and even in the IEEE.

Later that year, I was nominated for 1st VP of the Computer Society; I ran and won. As VP-elect, I had first choice of responsibilities for the following year. I selected Education, but the President Elect suggested that if I ever wanted to be CS President, I should choose something else, because Education was not a strategic path towards higher office. I chose Publications, and for the next couple of years, that's what I did –a highly visible position, and springboard to the presidency. As CS Publications VP, I also represented the CS on various IEEE committees, adding to my "visibility." After a couple of years and one failed run, I was elected president of the CS.

For the next three years, I was president-elect (2010), president (2011), and then past-president (2012) – nominally the triumvirate that runs the CS. Actually, the staff runs everything, and though the CS is nominally a volunteer-run organization, in day-to-day practice, it's not. The same is true of the IEEE. The presidency is a one-year term in both the CS and IEEE, but it's impossible to effect meaningful changes and programs in only one year. It takes at least half of a president's term to understand their "authority," but by then that president is a lame duck. C'est la vie!

Being president was a full-time "job," a lot of fun, and I didn't want to relinquish the reins when it was over. (Sound familiar?) I guess I wasn't silent about that because one of my going-away gifts from the CS was a rendition of Computer magazine with a photo of me on the cover and the byline,

President for Life! But of course, that can't be since CS rules, like the US Constitution, define the term limits for presidents. Most past presidents move to the IEEE Board of Directors as a Division Director, but my predecessor stupidly changed CS bylaws to prevent anyone from doing that, so I couldn't. I, however, as president, changed the bylaw back, allowing my successors to do that, but it was too late for me.

After all those "presidencies," I did move my volunteer activities over to IEEE where I was asked to fill a vacant Education Society board position for a couple of years, served on the IEEE Publications Board for several years, intermittently on the Education Activities Board, the IEEE Conference Committee, and then to serve on the Eta Kappa Nu board. I did have one exception when the CS asked me to be a Charter Member of the CS Distinguished Contributor Recognition Program. Since they had awarded me the Merwin Award, how could I refuse?

One of the IEEE committees I served on was the Xplore Ad Hoc – a handful of senior volunteers were invited onto this committee to meet 3 times/year and review and recommend changes to the IEEE digital library, Xplore. Many of the ideas that came up at those meetings could not be implemented in Xplore, for practical or legal reasons. Many of those ideas, however, were directly relevant to my day job as Managing Director of MERLOT, also a digital library. And frequently, I took ideas back to my own development team for integration into and improvement of MERLOT.

Most of my IEEE committee/board positions eventually termed out, though a few continue to this day. A position that has continued for more than 10 years has been the Standing Committee Chair of the Computer Society's signature conference, COMPSAC.

My introduction to COMPSAC was as CS President, representing the Board of Governors in Munich, Germany. I was invited the following year as Past President to Turkey but had to attend the Brazilian Computer Society annual meeting to represent the CS on a panel with the Executive Director of the ACM – both of us explaining why our organization was better than the other guy's! Later that year and the following year, when COMPSAC was in Taiwan, Carl Chang, the then COMPSAC Standing Committee Chair, asked me — I think he told me — that I should/would take over from him in that position as he was moving on to do other things. Subsequently, I took that COMPSAC position in 2015 and have been doing that ever since.

The last decade has been an exciting one for me and the conference. We had Covid and the Ukraine war – both significantly affecting the conference, but we managed to survive and even delivered profitable renditions every year. Also, during that time, I became an IEEE Fellow, and following in Carl Chang's footsteps, was named Honorary Member of the Information Processing Society of Japan (IPSJ) – a singular honor given to only 43 other people.

So, I arrive at the end of Part 2 – the second half of my career. Labeling each Part "half" implies that I've reached the end – two halves equal a whole. But I haven't reached the end. I intend to write more parts in the future, so Part 3 will represent a third, Part 4 a quarter, etc., etc., etc. Lots of parts to come, again as I said above, I hope!